

## CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

**Alabama.**—The mean temperature was 52.4°, or 3.2° below normal; the highest was 87°, at Prattville on the 11th, and the lowest, 17°, at Madison on the 16th. The average precipitation was 5.42, or 0.34 below normal; the greatest monthly amount, 8.64, occurred at Eufaula, and the least, 1.78, at Warrior.

While the rainfall for the entire State was slightly below the normal, the rains were so frequent and heavy as to seriously retard all farm work.—*E. P. Chaffee.*

**Arizona.**—The mean temperature was 59.1°, or 3.7° above normal; the highest was 101°, at Fort Mohave on the 11th, and the lowest, 10°, at Snowflake on the 2d. The average precipitation was 0.64, or 0.34 below normal; the greatest monthly amount, 2.74, occurred at Mount Huachuca, while none fell at several stations.—*W. G. Burns.*

**Arkansas.**—The mean temperature was 51.2°, or 0.2° above normal; the highest was 90°, at Prescott and Washington on the 12th and at Rison on the 13th, and the lowest, 7°, at Pond on the 1st. The average precipitation was 2.50, or 2.56 below normal; the greatest monthly amount, 5.55, occurred at Blanchard, and the least, 0.76, at Silver-springs.—*E. B. Richards.*

**California.**—The mean temperature for the State, obtained by weighting the reports from 193 stations, so that equal areas have about equal weight, was 55.7°, which was 3.9° above the March normal for the State, as determined from 161 records; the highest recorded temperature was 105°, at Ogilby, San Diego County, on the 10th; the lowest, 5° below zero, at Bodie, Mono County, on the 6th. The average precipitation for the State, as determined from the records of 195 stations, was 2.38; the deficiency, as indicated by reports from 164 stations which have normals, was 0.74; the greatest monthly amount was 12.24, at La Porte, Plumas County, while none fell at several stations in southern California.—*Alexander G. McAdie.*

**Colorado.**—The mean temperature was 39.0°, or 5.2° above normal; the highest was 85°, at Lamar on the 10th, and the lowest, 18° below zero, at Troutvale on the 6th. The average precipitation was 0.47, or 0.86 below normal; the greatest monthly amount, 1.43, occurred at Ruby, and the least, trace, at Perry Park, Saguache, and Vilas.—*F. H. Brandenburg.*

**Florida.**—The mean temperature was 63.6°, or 2.1° below normal; the highest was 93°, at Brooksville on the 23d, and the lowest, 25°, at Stephenville on the 2d. The average precipitation was 6.82, or 3.90 above normal; the greatest monthly amount, 12.37, occurred at McClenny, and the least, 2.40, at Clermont.—*A. J. Mitchell.*

**Georgia.**—The mean temperature was 53.2°, or 2.7° below normal; the highest was 88°, at Maury on the 12th and at Valona on the 14th, and the lowest, 17°, at Dahlonega and Diamond on the 17th. The average precipitation was 5.43, or practically normal; the greatest monthly amount, 8.12, occurred at Americus, and the least, 3.40, at Covington.—*J. B. Marbury.*

**Idaho.**—The mean temperature was 42.0°, or 6.9° above normal; the highest was 86°, at Hagerman on the 31st, and the lowest, 2° below zero, at Marysville on the 28th. The average precipitation was 1.16, or 0.44 below normal; the greatest monthly amount, 4.02, occurred at Fort Sherman, while none fell at Blackfoot and Downey.—*S. M. Blandford.*

**Illinois.**—The mean temperature was 34.4°, or 3.1° below normal; the highest was 62°, at St. John on the 12th, and the lowest, 4° below zero, at Scales Mound on the 17th. The average precipitation was 1.99, or about 1.25 below normal; the greatest monthly amount, 4.02, occurred at Palestine, and the least, 0.13, at Monticello.—*M. E. Blystone.*

**Indiana.**—The mean temperature was 35.6°, or 2.8° below normal; the highest was 75°, at Bedford on the 11th, and the lowest, 6° below zero, at Angola on the 16th. The average precipitation was 2.06, or 1.61 below normal; the greatest monthly amount, 3.46, occurred at Logansport, and the least, 0.74, at Winamac.—*C. F. R. Wappenhans.*

**Iowa.**—The mean temperature was 30.7°, or 2.5° below normal; the highest was 81°, at Wapello on the 23d, and the lowest, 13° below zero, at Osage on the 16th. The average precipitation was 2.06, or 0.31 below normal; the greatest monthly amount, 5.15, occurred at Fonda, and the least, 0.45, at Whitten.—*J. R. Sage, Director; G. M. Chappel, Assistant.*

**Kansas.**—The mean temperature was 42.5°, or 1.8° above normal; the highest was 94°, at Englewood on the 12th, and the lowest, 7° below zero, at Emporia and Marion on the 1st. The average precipitation was 0.80, or 0.72 below normal; the greatest monthly amount, 2.14, occurred at Wakeeney, and the least, trace, at Hays and Winona.—*T. B. Jennings.*

**Kentucky.**—The mean temperature was 42.8°, or 2.9° below normal; the highest was 81°, at Paducah on the 11th, and the lowest, 3° below zero, at Shelby City on the 17th. The average precipitation was 2.58, or 2.93 below normal; the greatest monthly amount, 5.14, occurred at Eubank, and the least, 1.11, at Canton.—*H. B. Hersey.*

**Louisiana.**—The mean temperature was 59.5°, or 2.3° below normal; the highest was 93°, at Monroe on the 13th, and the lowest, 24°, at Plain Dealing, on the 1st. The average precipitation was 5.69, or 0.99 above normal; the greatest monthly amount, 8.39, occurred at Venice, and the least, 3.22, at Cheneyville.—*W. T. Blythe.*

**Maryland and Delaware.**—The mean temperature was 39.0°, or 4.4° below normal; the highest was 74°, at Easton, Md., on the 7th, and the lowest, 8° below zero, at Boettcherville, Md., on the 18th. The average precipitation was 3.22, or 0.36 below normal; the greatest monthly amount, 5.05, occurred at Sunnyside, Md., and the least, 1.31, at Denton, Md.—*F. J. Wals.*

**Michigan.**—The mean temperature was 22.8°, or 5.4° below normal; the highest was 56°, at St. Joseph on the 30th, and the lowest, 29° below zero, at Humboldt on the 23d. The average precipitation was 1.80, or 0.54 below normal; the greatest monthly amount, 4.46, occurred at Fitchburg, and the least, 0.37, at Sault Ste. Marie.

This is the coldest March on record (back to and including 1887). While the precipitation was below the normal, the amount of snowfall was comparatively greater than during any previous March on record excepting March, 1899, when the average total fall was 22.5 inches. During March, 1900, the southern counties were covered with snow most of the month. During the month, and in fact during the entire winter, the snowfall has generally been much less than usual in the northern counties and upper peninsula, and considerably above the normal in the central and southern counties. The average total precipitation for the State was less than during March, 1897, 1898, and 1899.—*C. F. Schneider.*

**Minnesota.**—The mean temperature was 23.4°, or about normal; the highest was 69°, at Camden on the 12th, and the lowest, 30° below zero, at Tower on the 4th. The average precipitation was 1.30, or about normal; the greatest monthly amount, 2.81, occurred at St. Peter and Worthington, and the least, 0.15, at Mount Iron.—*T. S. Outram.*

**Mississippi.**—The mean temperature was 53.8°, or about 3° below normal; the highest was 90°, at Natchez on the 12th and at Port Gibson on the 13th, and the lowest, 20°, at Aberdeen on the 2d. The average precipitation was 4.77, or about 1.00 below normal; the greatest monthly amount, 8.84, occurred at Columbus, and the least, 2.20, at Austin.—*H. E. Wilkinson.*

**Missouri.**—The mean temperature was 40.4°, or 1.4° below normal; the highest was 88°, at Wylie on the 11th, and the lowest, 4° below zero, at Maryville and Conception on the 16th. The average precipitation was 1.48, or 1.98 below normal; the greatest monthly amount, 3.41, occurred at New Madrid, and the least, 0.40, at Mount Vernon.

Over much the greater portion of the State the precipitation of the month was remarkably light, the central and northeast sections receiving a little less than half, and the southern sections only about one-third the usual amount. In portions of the central and northern sections, however, the soil really received more than the usual amount of moisture through the melting of the snow which covered the ground to depths ranging from 10 to 28 inches at the beginning of the month.—*A. E. Huckelt.*

**Montana.**—The mean temperature was 35.2°, or 7.9° above normal; the highest was 75°, at Crow Agency on the 11th, and the lowest, 25° below zero, at Glasgow on the 6th. The average precipitation was 0.88, or 0.12 above normal; the greatest monthly amount, 3.02, occurred at Troy, and the least, 0.10, at Crow Agency.—*E. J. Glass.*

**Nebraska.**—The mean temperature was 36.2°, or 2.3° above normal; the highest was 90°, at Alma on the 10th and 11th, and the lowest, 11° below zero, at Crete on the 16th. The average precipitation was 0.62, or 0.51 below normal; the greatest monthly amount, 2.34, occurred at Hartington, and the least, trace, at Lodgepole and Merriman.—*G. A. Loveland.*

**Nevada.**—The mean temperature was 44.2°, or about 6° above normal; the highest was 81°, at Candelaria on the 12th, and the lowest, 3°, at Empire Ranch on the 6th. The average precipitation was 0.51, or about 0.80 below normal; the greatest monthly amount, 2.41 occurred at Lewer's Ranch, and the least, trace, at Toano.

Exceptionally mild weather prevailed throughout the month. It was the warmest and driest March in the past twelve years. Over the greater part of the State plowing and seeding progressed during the entire month.—*J. H. Smith.*

**New England.**—The mean temperature was 27.8°, or 3.2° below normal; the highest was 59°, at several stations in Massachusetts on the 19th and 23d, and the lowest, 30° below zero, at Flagstaff, Me., on the 5th. The average precipitation was 5.17, or 1.65 above normal; the greatest monthly amount, 8.57, occurred at Bar Harbor, Me., and the least, 2.60, at Cornwall, Vt.—*J. W. Smith.*

**New Jersey.**—The mean temperature was 35.6°, or 2.8° below normal; the highest was 67°, at Bridgeton and Cape May C. H. on the 23d, and the lowest, 9° below zero, at Deckertown on the 18th. The average precipitation was 3.51, or 0.38 below normal; the greatest monthly amount, 4.96, occurred at Ocean City, and the least, 2.48, at Friesburg.—*E. W. McGann.*

**New Mexico.**—The mean temperature was 47.4°, or 2.2° above normal; the highest was 88°, at Roswell on the 12th, and the lowest, 9° at Aztec on the 16th. The average precipitation was 0.67, or 0.11 above normal; the greatest monthly amount, 1.55, occurred at Fort Bayard, and the least, trace, at Raton. Owing to the mild winter plowing and planting was carried on during the month in the warmer sections, and nearly a month ahead of last year.—*R. M. Hardinge.*

**New York.**—The mean temperature was 25.2°, or 5.4° below normal; the highest was 61°, at Wappingers Falls on the 20th, and the lowest, 29° below zero, at Axton on the 12th. The average precipitation was 4.08, or 1.07 above normal; the greatest monthly amount, 10.47, occurred at North Lake, and the least, 1.01, at Lyndonville.—*R. G. Allen.*

**North Carolina.**—The mean temperature was 47.0°, or 1.5° below normal; the highest was 79°, at Cherryville and Henrietta on the 11th, and the lowest, 5°, at Brewers on the 17th. The average precipitation was 4.48, or 0.16 below normal; the greatest monthly amount, 7.60, occurred at Linville, and the least, 2.48, at Wilmington.—*C. F. von Herrmann.*

**North Dakota.**—The mean temperature was 21.0°, or 0.7° above normal; the highest was 77°, at Medora on the 11th, and the lowest, 24° below zero, at Towner on the 1st. The average precipitation was 1.09, or 0.13 above normal; the greatest monthly amount, 2.65, occurred at Ellendale, and the least, 0.15 at Dunseith.—*B. H. Bronson.*

**Ohio.**—The mean temperature was 32.9°, or 5.5° below normal; the highest was 70°, at Hanging Rock on the 13th, and the lowest, 9° below zero, at Hillhouse on the 12th. The average precipitation was 2.35, or 1.07 below normal; the greatest monthly amount, 4.30, occurred at Mansfield, and the least, 0.92, at Hudson.—*J. Warren Smith.*

**Oklahoma.**—The mean temperature was 49.9°, or 0.5° above normal; the highest was 95°, at Burnett on the 11th, and the lowest, 12°, at Hopeton and Jefferson on the 1st. The average precipitation was 0.76, or 1.33 below normal; the greatest monthly amount, 2.41, occurred at Lehigh, and the least, 0.03, at Edmond.—*C. M. Strong.*

**Oregon.**—The mean temperature was 49.3°, or 6.1° above normal, and the highest on record for the month of March; the highest was 99°, at Merlin on the 13th, and the lowest, 11°, at Lakeview on the 26th. The average precipitation was 4.63, or 0.24 below normal; the greatest monthly amount, 11.98, occurred at Glenora, and the least, 0.15, at Prineville.—*E. A. Beals.*

**Pennsylvania.**—The mean temperature was 31.2°, or 3.6° below normal; the highest was 66°, at Coatesville on the 23d, and the lowest, 23° below zero, at Dyberry on the 18th. The average precipitation was 3.61, or 0.46 above normal; the greatest monthly amount, 7.31, occurred at Somerset, and the least, 2.25, at Lycippus.—*T. F. Townsend.*

**South Carolina.**—The mean temperature was 51.6°, or 3.1° below normal; the highest was 79°, at Charleston and Yemassee on the 30th, and the lowest, 22°, at Santuc and Spartanburg on the 17th. The average precipitation was 4.22, or 0.66 above normal; the greatest monthly amount, 7.58, occurred at Greenville, and the least, 0.96, at Pinopolis.—*J. W. Bauer.*

**South Dakota.**—The mean temperature was 29.0°, or about 1° above normal; the highest was 78°, at Cherry Creek on the 10th and at Interior on the 11th, and the lowest, 19° below zero, at Wessington Springs on the 16th. The average precipitation was 1.66, or about 0.53 above

normal; the greatest monthly amount, 3.89, occurred at DeSmet, and the least, 0.20, at Interior.—*S. W. Glenn.*

**Tennessee.**—The mean temperature was 46.5°, or about 2.0° below normal; the highest was 81°, at Memphis on the 11th, and the lowest, 2°, at Bristol on the 17th. The average precipitation was 3.66 or about 2.00 below normal; the greatest monthly amount, 6.82, occurred at Oak-hill, and the least, 1.83, at Trenton.—*H. C. Bate.*

**Texas.**—The mean temperature, determined by comparison of 47 stations distributed throughout the State, was 0.5 below normal. There was a slight excess over the extreme northwest portion of the State, and a general deficiency elsewhere, with the greatest over southwest Texas and the east coast district. The highest was 92°, at Paris on the 12th, and the lowest, 15°, at Anna on the 1st. The average precipitation, determined by comparison of 52 stations distributed throughout the State, was 2.20 above the normal. Nearly normal conditions prevailed over the northwestern half of the State while there was a marked excess over the southeastern half, with the greatest, 9.02, at Cuero. The greatest monthly amount, 10.43, occurred at Cuero, and least, 0.05, at Valentine.—*I. M. Chitt.*

**Utah.**—The mean temperature was 43.9°, or 7.0° above normal; the highest was 86°, at St. George on the 12th, 13th, and 31st, and the lowest, 6°, at Pinto on the 5th and Soldier Summit on the 6th. The average precipitation was 0.19, or 1.41 below normal; the greatest monthly amount, 1.20, occurred near Marysville, while none fell at six stations. It was the clearest, driest, and warmest March on record for this State.—*L. H. Murdoch.*

**Virginia.**—The mean temperature was 41.9°, or about 3° below normal; the highest was 75°, at Farmville on the 23d, and the lowest, 2° below zero, at Blacksburg on the 17th and at Stephens City on the 18th. The average precipitation was 3.73, or 0.12 above normal; the greatest monthly amount, 6.17, occurred at Freeling, and the least, 1.36, at Manassas.—*E. A. Evans.*

**Washington.**—The mean temperature was 46.9°, or 6.6° above normal, and the warmest March on record; the highest was 83°, at Southbend on the 30th, and the lowest, 16°, at Northport on the 2d. The average precipitation was 3.91, or 1.08 above normal; the greatest monthly amount, 15.59, occurred at Union, and the least, trace, at Loomis.

On the account of the exceptional mildness of the month, the weather conditions were extremely favorable for the growth of the staple crops and the development of fruit. More than the usual amount of plowing and spring seeding was accomplished. Fall sown wheat is in splendid condition, and the pastures are as far advanced as is usual in May.—*G. N. Salisbury.*

**West Virginia.**—The mean temperature was 38.5°, or 3.5° below normal; the highest was 78°, at Madison on the 13th, and the lowest, 5° below zero, at Burlington on the 18th. The average precipitation was 3.79, or 0.05 below normal; the greatest monthly amount, 6.48, occurred at Bluefield, and the least, 2.18, at Parkersburg.—*E. C. Vose.*

**Wisconsin.**—The mean temperature was 24.7°, or about 3.0° below normal; the highest was 62°, at Spooner on the 31st, and the lowest, 24° below zero, at Butternut on the 16th. The average precipitation was 1.26, or 0.67 below normal; the greatest monthly amount, 2.86, occurred at Pepin, and the least, 0.40, at Stevens Point.—*W. M. Wilson.*

**Wyoming.**—The mean temperature was 35.1°, or 6.1° above normal; the highest was 80°, at Burlington on the 13th and at Bittercreek on the 25th, and the lowest, 16° below zero, at Douglas on the 4th. The average precipitation was 0.44, or 0.97 below normal; the greatest monthly amount, 3.13, occurred at Fort Yellowstone, while none fell at Embar and Lusk.—*W. S. Palmer.*

## SPECIAL CONTRIBUTIONS.

### COMPARATIVE THERMOMETER READINGS AT NEW YORK, N. Y.

By ALFRED J. HENRY, Professor of Meteorology.

In the MONTHLY WEATHER REVIEW for October, 1898, Vol. XXVI, page 455, an account is given of the removal of the Weather Bureau office in New York, N. Y., from the Manhattan Building, No. 66 Broadway, to the American Surety Building, No. 100 Broadway. The roof of the last-named building is flat and appeared to offer exceptionally good exposures for the various meteorological instruments. The presence of an exhaust pipe to the southeastward of the thermometer shelter was noted as an objectionable feature at the time of removal, but it was believed it would only affect the thermometer readings when the wind was from the southeast. The experience of a single winter was, however, sufficient to convince the official in charge of the station that artificial

heat was being communicated to the thermometers, not only by the exhaust pipe above referred to, but by a number of ventilating shafts that discharged hot air at varying distance from the thermometers.

Acting on Mr. Emery's recommendation, an instrument shelter was erected on the roof of the adjoining premises—the Scherhorn Building—at a point slightly over 200 feet below the shelter on the American Surety Building but still about 110 feet above the street. The roof of the Scherhorn Building is 101.5 feet above the Broadway sidewalk. The floor of the instrument shelter was placed 6.3 feet above the roof of the building and the thermometers were placed on cross pieces about a foot higher.

Comparative readings between thermometers in the two shelters were made from October 27 to November 5, and from November 11 to December 31. The mean results for the first period showed that the temperatures in the two shelters were